PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF
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The Etiology and Pathological Anatomy of Rheumatic Myocarditis.—E. BRACHT and WÄCHTER (*Deut. Archiv f. klin. Med.*, 1909, xcvi, Heft 5 and 6) quote Ashoff and Tawara as describing certain nodule in the heart which were specifically characteristic of rheumatic myocarditis. The specificity of these nodules they say has been disputed by some observers, but all observers have found them. Not all rheumatic cases show the nodules, but where present it is always in rheumatic hearts. The nodules described by the present authors were found in three out of four cases whose clinical diagnosis had been rheumatism. In two of the three cases streptococcus was found in the blood. The authors describe perivascular subendocardial nodules or scars containing large cells and giant cells, and surrounded by a zone of lymphoid elements with occasional leukocytes and plasma cells. Often a proliferation of fibroblastic cells was seen. The adjacent muscle bundles often suffer from pressure, so that when the number is great, distinct effect on the function of the heart muscle results. There seemed to be a tendency for the nodules to occur in the neighborhood of the auriculo-ventricular bundle, with a directly damaging result to that structure. But there are often found in old hearts whose function is undisturbed, many of these rheumatic scars, so that their disposition is apparently more important than their number. Efforts to find a cause for the nodules in the action of bacteria in and about the scars were fruitless. Bracht and Wächter then inoculated animals with Diplostreptococcus rheumaticus. Subsequently the heart muscle was found sprinkled with areas of necrosis in which could be seen proliferation of fibroblast cells, going on to the large cell and giant cell formation described above, with an encircling zone of lymphoid cell infiltration and a few plasma cells. Myocarditis produced by other strains of streptococci showed the usual reaction of tissue to bacteria, that is, gathering of polymorphonuclear leukocytes and often abscess formation.

Experiments upon Increased Blood Pressure in Nephritis.—ALWENS (*Deut. Arch f. klin. Med.*, 1909, xcviii, 137) has modified some methods used by Schlayer to study the effect upon the blood pressure of decreasing the calibre of the renal vessels. It has been long known that one or both renal arteries may be tied off without an accompanying rise in blood pressure, but Katzenstein found in certain experiments that occlusion of the small vessels of the kidney by thrombus masses was followed by an elevation of blood pressure. By means of oncometers

Alwens has compressed the kidneys using a pressure varying from 90 to 135 mm. of Hg. Compression of the entire kidney by this means produces a rise in the systemic pressure of from 20 to 26 mm. of Hg. This phenomenon seems to be absolutely dependent upon compression of the small vessels of the kidney for ligation of the renal artery prevented any rise. He also shows that simple compression of a kidney which is deprived of its blood supply will not influence blood pressure. The reason for this rise of pressure is not perfectly clear. It is apparently not associated with a nervous reflex acting upon the other vessels of the body, for the rise in blood pressure still took place after freeing the kidney pedicle from nerves, section of the splanchnic nerve, and section of the medulla. Neither is it due to a sudden increase in the amount of blood in the body for direct infusion of much larger quantities of fluid is incapable of increasing blood pressure. In spite of the fact that the action seemed independent of the nervous system, still it was thought possible that contraction of the vessels of other organs might account for the rise of pressure. When the left kidney was compressed, however and the right kidney put in an oncometer no change in the size of the kidney was observed. Comparison of the other internal organs gave somewhat similar results. With compression of the spleen the rise in pressure was quite marked, but not constant; with the coils of intestine the rise was still less marked and very inconstant. Compression of the limbs, on the other hand, never gave rise to increased pressure. Alwens believes that compression of the small vessels of the extremities is compensated for by dilatation of the vessels of the internal organs, whereas there is no such mechanism to compensate for the compression of the well protected abdominal organs. The difference in the quantitative changes in the pressure in these experiments and in the contracted kidney in man are so great that it is almost impossible to apply the purely mechanical theory of heightened blood pressure in nephritis upon these grounds.

The Present Status of Trachoma Bodies.—In 1907 Halberstädter and Prowazek described certain bodies which they had found in the epithelial cells of trachoma granules, but which could not be found in the normal conjunctiva or in diseases of the eye other than trachoma. These bodies could be transferred from man to monkey and from animal to animal though every inoculation was not successful. Later Graefe, Frosh, and Clausen stated that they could be found not only in the epithelial cells of the conjunctiva of early cases of trachoma, but in old cases as well and in the eye secretions and cells of the follicles. LINDNER (*Wien. klin. Woch.*, 1909, xxii, 1742), who has studied the question for some time, has confirmed these observations and gives a detailed description of the bodies which he considers to be the cause of the disease. Recently Heymann reported that he had been able to demonstrate bodies in the epithelial cells from cases of conjunctivitis neonatorum which could not be distinguished from those described by Prowazek. To control this discovery Lindner examined 31 cases of conjunctivitis neonatorum. In this category are placed all cases of purulent conjunctivitis of the new born, but 3 cases, which were old must be excluded since the findings were negative. Of the other 28, 13 were due to the gonococcus and though the organisms were occasionally seen within epithelial cells, forming masses which might be mistaken for trachoma bodies, neither in 12 of these cases nor in 8 cases of gonorrhœal conjunctivitis of adults could true trachoma bodies be found. In one of the cases of gonorrhœal conjunctivitis of the new born, however and in all the other 15 cases of blennorrhœa neonatorum typical trachoma bodies were found. Lindner considers this of great significance and believes that this conjunctivitis of the new born and trachoma are one and the same disease caused by the same parasite. This view was strengthened by the fact that an ape inoculated with material from a case of conjunctivitis neonatorum in which the peculiar bodies were present developed after a preliminary conjunctivitis typical trachoma granules in which were found the trachoma bodies. He believes that infection of the eye takes place during birth and from the vagina, which may be the seat of the disease.

Calcium and Cardiac Inhibition.—It has been shown by Schiff that a solution of physiological sodium chloride allowed to perfuse the heart of a living frog until all the blood is washed away causes immediate cessation of the cardio-inhibitory action of the vagus nerve. Busquet and Pachon (*Jour. de. phys. et de path. gen.*, 1909, xi, 807, 851) have repeated and confirmed these experiments in an isolated frog's heart. Many different salts of sodium were employed but they all had the same effect. When minute traces of calcium were added to the saline solution the cardio-inhibitory action of the vagus was immediately restored and with the removal of the calcium salts was equally rapidly lost. Further experiments showed moreover that calcium was absolutely necessary for the preservation of the cardio-inhibitory action of the vagus. The salts of the nearly allied metals such as K, Sr, Ba, and Mg were all infective. Calcium, however in various forms could be employed with success. It was even active in such organic substances as gum arabic and gelatin. When the salts of Na were injected intramuscularly or subcutaneously the cardio-inhibitory action of the vagus was disturbed only by a small group including the carbonate, oxalate and citrate. These salts, as could be shown later, are capable of making Ca inactive and their action seems to be much the same as in the prevention of coagulation of the blood by decalcification. If in the closed circulation an isotonic solution of NaCl be substituted for the blood the cardio-inhibitory action of the vagus is still well preserved even after twenty hours. This is probably due to the fact that small traces of calcium are constantly being washed from the organs of the body into the blood whence they are carried to the heart.

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